BoostEdu Case study
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Abstract/Introduction

The case study is devoted to the design of a new course titled Sustainable Leadership focused on development of leadership skills for students as future owners and managers. The emphasis by designing the course has been put on identifying and testing new modern digital tools for enhancing effectivity in teaching this type of developmental course. The case study has been conducted according to the settled project plan based on the proposed timeline scheduled in the project. The selected and relevant EdTech tools has been tested in two bachelor courses "Managerial Communication" and "Behavioural Skills for Managers" and based on gained results and feedback received by 630 students enrolled in, as well the two courses have been re-designed by implementing with positively perceived elements in order that recently students work in a hybrid blended mode, using a variety of EdTech tools.

Key words: EdTech, Digital tools in Education, gamification, hybrid learning, blended learning

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1: Motivation/Goal/Starting point

The education sector has been undergoing technological transition with its numerous opportunities and challenges. Virtual classrooms, hybrid and blended forms of learning has been taking over from traditional classrooms. The real question is how might modern technologies help and be effectively used in educational processes at higher educational institutions?

This topic can be answered in a variety of ways, however in the context of our project we have been observing three major segments that are followed in order to describe the advantages of Ed Tech and its benefits for educational process:

1) Educational institutions that are searching for solutions to improve the efficiency and security of student data storage and management;

2) Learners who would benefit from more interesting, dependable, and long-term methods of accumulating, attesting, and sharing information;

3) Employers who want to assess the validity of students' talents and credentials in a trustworthy and secure manner.

Brno University of Technology (BUT) is a public research university located in Brno, Czech Republic. The university was established in 1899 and is one of the oldest technical universities in the country. BUT offers a comprehensive range of technical and scientific programs, including engineering, computer science, natural sciences, and other related fields.

The university has a student population of over 19,000 with a significant proportion of international students from over 70 countries. BUT has a strong focus on international partnerships and collaborations, which contribute to the diversity of its student body and faculty.

According to recent data from the Ministry of Education, Youth, and Sports of the Czech Republic, BUT is ranked as the second-best technical university in the country (https://www.mvcr.cz/statistics/). The university has a highly qualified faculty, comprised of experienced educators and researchers, many of whom are recognized experts in their respective fields.

The university places a strong emphasis on providing students with a well-rounded education, incorporating practical experience through internships, co-op programs, and other hands-on opportunities. This approach to education is designed to enhance students' theoretical knowledge and practical skills, and prepare them for careers in their chosen fields.

BUT invests in technology and infrastructure, with state-of-the-art labs, research facilities, and classrooms. The university also prioritizes interdisciplinary collaboration and encourages students and faculty to work together across different fields and programs. This approach to

education and research is intended to promote innovation and enhance the quality of education and research at BUT.

Brno University of Technology is a well-established public research university that offers a comprehensive range of technical and scientific programs. With its diverse student body, international focus, and commitment to interdisciplinary collaboration and innovation, BUT is a leading institution in the field of technical and scientific education in the Czech Republic.

This points towards a strong need for enhancing online, distance and blended learning including support for teachers and learners. This need has been also expressed in the Extraordinary Erasmus+ call to support Digital Education Readiness in response to Coronavirus pandemic.

The case study has been carried out within the context of the Faculty of Business and Management. The faculty provides bachelor, master programs and PhD program aimed on development of managerial, entrepreneurial skills inside of a technical oriented university.

From the proposal and following the frame of the BOOST EDU project, we have been focused on designing a new course that is described in next parts of this case study.

1.1. Main goal:

The main goal of designing of a new course based on hybrid approach (face-to-face classroom with online activities). Furthermore, inviting leaders for sharing their experience, project based approach and implementing elements of gamification has been another important implementation in designing of this new course.

The overview with the main information towards the course are following:

Title of the course: Sustainable Leadership
Guarantor of the course: assoc. Prof. Ing. Zdenka Konecna, Ph.D.

Learning outcomes:
Students will acquire relevant knowledge from the field of social capability and competence primarily aimed at social interactive patterns. They will have a clear idea of fundamental theoretical models and strategies of human interactions as well as their practical application. In seminars they will consolidate and develop their skills necessary to make the process of

social interactions more effective in common situations as well as in demanding situations at work.

The main ambition by designing a new course focused on obtaining knowledge towards the principles of sustainable leadership for both engineering and business students on Master level. The idea is to prepare a course combining face-to-face and virtual lectures with students´ seminars with online activities and managerial simulation game. Part of this course should be represent in form of discussions with leaders from commercial and non-commercial sphere. Students will work in teams on solving issues connected with situation in their imaginal company.

Key assumption: Activate students for cooperation during the sessions.

Key question: How to rise curiosity and activate creativity inside of students in order to motivate them for active participation on education process? How to create a culture of mutual cooperation?

Elements of the design:
- simulation managerial game,
- discussions with leaders and experts from commercial sphere for sharing their experience and practices with leading their teams,
- team work,
- peer-to-peer learning,
- optimization of synchronous and asynchronous approach,
- Online learning support.

Outline:
- Spring/Summer 2021 – design of the course.
- Fall 2021: first testing of the course, data collection (observations, debate and feedback)
- Spring 2022:data analysis, optimization of the design based on feedback from the first testing of the course
- Summer 2022: design of the of the second draft the course
- Fall 2022: second testing of improved concept the course
- Spring 2023: data analysis, optimization of the design of the course.

The main elements of designing of a new course based on *hybrid approach* (face-to-face classroom with online activities):

- project based approach,
- cooperation with local companies and inviting leaders for sharing their experience, collaborative learning to stimulate gaining of leadership skills,
- better use of digital technology in education,
- team work + peer-to-peer learning,
- LMS,
- activities are planned for 13 weeks.

2. Course structure and content

Course aim has been defined as understanding new leadership approaches like a new mind-set supporting of implementation of digital culture in the context of sustainable environment. Moreover, to inspire and enable students to lead effective change towards digitalization and sustainability with focus on enhancing individual leadership skills as applied to a variety of organizational contexts (business, public, government, NGO´s, etc).

The course explores what leadership for sustainability means and guides students to advance their related competencies and strategies. The personal, interpersonal and as well organizational dimensions are addressed.

Teaching Methods:

We try to develop a variety of effective conceptual frameworks and core insights to accelerate the learning process of our students.

- collaborative learning to stimulate gaining of leadership skills (work in teams + peer-to-peer learning)
- project based approach (work on team project)
- better use of digital technology (simulation game, interactive online tools – e.g. LMS.)

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- cooperation with leaders from regional companies (consultations, discussions with leaders for sharing their experience)

The whole course of Sustainable Leadership has been divided into the lectures and seminars with proposed following content relevant for the topic of Sustainable Leadership. The timeframe for teaching of the time period of 13 weeks:

1st week: Introduction to the course.

2nd week: Self-assessment as a base for an effective leadership.

3rd week: Personality models.

4th week: Principles of effective teamwork. Team roles.

5th week: New concepts of leadership. Leadership styles.

6th week: Effective motivation, coaching, mentoring.

7th week: Understanding of sustainability concept for managerial work.

8th week: Change management and its principles for business transformation.

9th week: Stress as a part of managerial work and its elimination.

10th week: Crisis as the driving force of teamwork.

11th week: Effective communication in a diverse environment.

12th week: Expert reflection from practice. An interactive discussion with an invited leader from partner company.

13th week: Expert reflection from practice. An interactive discussion with an invited leader from partner company/NGO.

With above mentioned lectures are connected seminars where students create teams at the beginning of a particular semester and work together on making decisions and solving issues in a developed managerial simulation game. During dealing with challenges of the simulation game they have to observe their team work. At the end of the whole semester they prepare

a team presentation which should include not just the game results, but as well their feeadback and selfreflection on their team communication and mutual cooperation. They have to analyse their team work development.

In the following text is content of seminars proposed:

1st week: On-line assessment tools.

2nd week: Individual Feedback.

3rd week: Team game.

4th week: Team simulation game.

5th week: Team simulation game.

6th week: Team simulation game.

7th week: Consultation with an Expert.

8th week: Team simulation game.

9th week: Team simulation game.

10th week: Team simulation game.

11th week: Consultation with an Expert.

12th week: Finalising of Team Assignments.

13th week: Presentation of Team Projects with feedback from invited experts.

A new element is the emphasis on rotation of team role of leader in the students teams so that each student will gain the experience of a team leader by the end of the course and their task is as well to write final report about their team work and self-reflection of each student how they have managed to be a team leader with formulating their contribution to the team work and their ability to deal with challenges in their work.

There is created a team of teachers and tutors, instead of one person delivering the entire course. All involved lecturers has to be trained and familiar with the concept of the course and simulation game.

All materials, including literature, tutorials and further instructions has to be uploaded directly to the LMS course page.
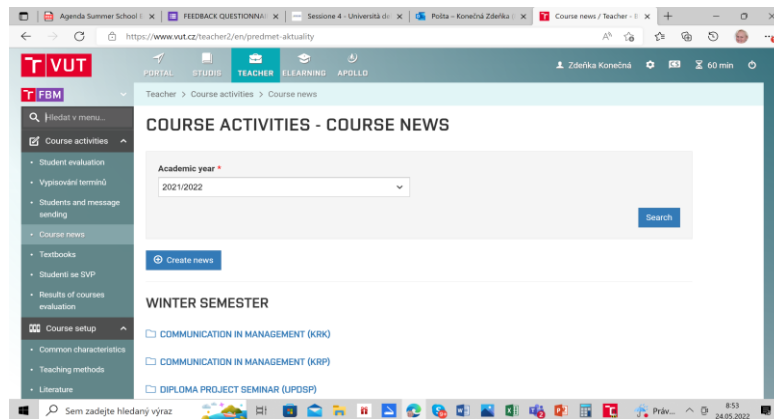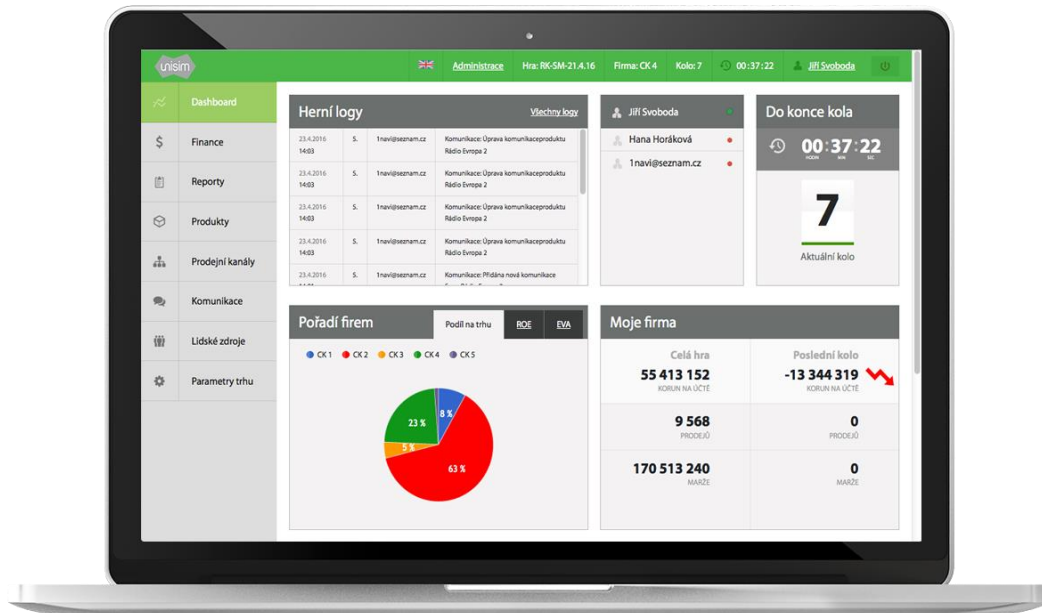

Picture 1: Communication platform for sharing information towards the course.

For communicating with students are used diverse channels as Webteacher, Apollo, Moodle, MS Teams. This channels are perceived like confusing for searching of relevant information on side of students and very time consuming on the side of lecturers. So, the discussion with faculty and university management has started in order to simplify this way of sharing information and giving relevant instructions for students.

Bellow, there is an excerpt from an Apollo system used nowadays at university.
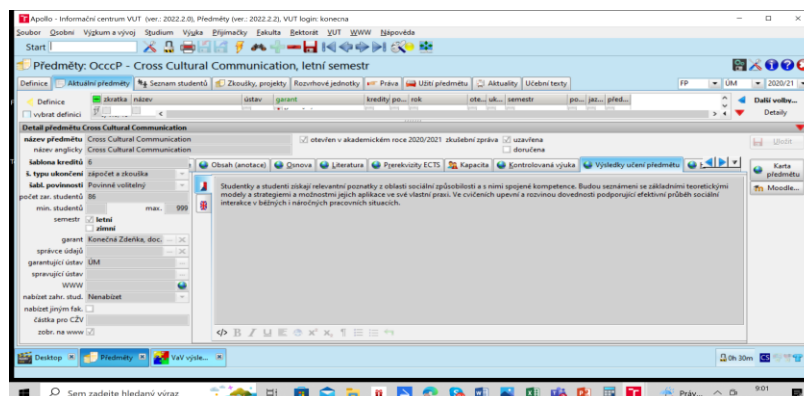
The following pictures demonstrate the working environment for students in the simulation managerial game:

3. Conclusions

The process of designing the new course of Sustainable Leadership and re-designing of already existing courses of Managerial Communication and Behavioral Skills Development on bachelor level lead to clearly understanding of both, opportunities and challenges of implementation of blended and hybrid type of learning, as well as by using new digital tools for teaching and learning processes. Based on the students´ feedback the team work and dealing with issues relevant to real practical situations in companies operating on certain market enable them very intense and effective development of leadership skills, on the other hand, the use of an recent LMS – in our case Webteacher and E-learning platform of Moodle type poses a number of challenges.

However, students appreciate very much the discussions and feedback from experts not only from academia but as well from local companies.